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**DUAL GATE OXIDE HIGH-VOLTAGE SEMICONDUCTOR DEVICE
AND METHOD FOR FORMING THE SAME**

Abstract of the Invention

A dual gate oxide high-voltage semiconductor device and method for forming the same are provided. Specifically, a device formed according to the present invention includes a semiconductor substrate, a buried oxide layer formed over the substrate, a silicon layer formed over the buried oxide layer, and a top oxide layer formed over the silicon layer. Adjacent an edge of the top oxide layer, a dual gate oxide is formed. The dual gate oxide allows both specific-on-resistance and breakdown voltage of the device to be optimized.